

CLAIMS

- 1 1. A reliability buffering method associated with a project planning model having project
2 plan data and having a plurality of activities, wherein each or the plurality of activities has one or
3 more activity time precedence relationships, comprising:
4 adding activity characteristics data to the project plan data;
5 generating a reliability buffer duration value corresponding to the project plan data; and
6 placing a reliability buffer in front of a downstream activity.
- 1 2. The reliability buffering method of claim 1, further comprising:
2 adding activity relationship data to the project plan data.
- 1 3. The reliability buffering method of claim 1, further comprising:
2 altering the one or more activity time precedence relationships.
- 1 4. A reliability buffering method associated with a project planning model having project
2 plan data, having a project schedule, and having a plurality of activities, comprising:
3 selecting a downstream activity from among the plurality of activities;
4 adding activity relationship data associated with the downstream activity and with at least
5 one upstream activity to the project plan data;
6 adding activity characteristics data associated with the downstream activity to the project
7 plan data; and
8 placing a reliability time buffer in a buffer time precedence relationship with the
9 downstream activity to provide a buffered downstream activity.
- 1 5. The reliability buffering method of claim 4, wherein adding activity relationship data
2 comprises:
3 adding a downstream sensitivity value associated with the activity time precedence
4 relationship to the project plan data.

1 6. The reliability buffering method of claim 4, wherein adding activity characteristics data
2 comprises:

3 adding an activity reliability value to the project plan data.

1 7. The reliability buffering method of claim 4, wherein adding activity characteristics data
2 comprises:

3 adding an activity production rate value to the project plan data.

1 8. The reliability buffering method of claim 4, wherein the buffer time precedence
2 relationship is finish to start.

1 9. The reliability buffering method of claim 4, further comprising:

2 generating a reliability buffer duration value associated with the reliability buffer and
3 corresponding to the project plan data; and

4 generating an activity time precedence relationship between the buffered downstream
5 activity and the at least one upstream activity, corresponding to the project plan data, to provide
6 an initial reliability buffer project plan.

1 10. The reliability buffering method of claim 9, wherein the activity time precedence
2 relationship is selected from the group consisting of finish to start, finish to finish, start to start,
3 and start to finish.

1 11. The reliability buffering method of claim 9, wherein generating the reliability buffer
2 duration value comprises:

3 selecting one or more upstream activities associated with the downstream activity from
4 among the plurality of activities; and

5 generating a reliability buffer duration value that reduces a simulated schedule delay to
6 the project schedule that occurs due to simulated schedule delays of respective ones of the one or
7 more upstream activities, and that increases a simulated schedule advance to the project schedule

8 that occurs due to simulated schedule advances of respective ones of the one or more upstream
9 activities.

1 12. The reliability buffering method of claim 11, wherein generating the reliability buffer
2 duration value comprises:

3 selecting a plurality of reliability buffer duration values; and
4 for each of the plurality of reliability buffer duration values,
5 generating a simulated project schedule and a simulated project cost;
6 analyzing the simulated project schedules and the simulated project costs
7 associated with the plurality of reliability buffer duration values; and
8 selecting the reliability buffer duration value and the associated project schedule
9 corresponding to a smallest simulated project schedule or associated with a smallest simulated
10 project cost.

11 13. The reliability buffering method of claim 9, wherein generating the activity time
12 precedence relationship comprises:

13 selecting a time precedence relationship from the group consisting of a finish to start
14 relationship, a finish to finish relationship, a start to finish relationship, and a finish to start
15 relationship;

16 selecting one or more upstream activities associated with the downstream activity from
17 among the plurality of activities; and

18 generating a reliability buffer lead or lag value that reduces a simulated schedule delay to
19 the project schedule that occurs due to simulated schedule delays of respective ones of the one or
20 more upstream activities, and that increases a simulated schedule advance to the project schedule
21 that occurs due to simulated schedule advances of respective ones of the one or more upstream
22 activities.

1 14. The reliability buffering method of claim 9, further comprising:
2 adding policy data to the project plan data.

- 1 15. The reliability buffering method of claim 14, wherein adding policy data comprises:
2 adding at least one of:
3 a manpower availability versus time value;
4 a overtime and flexible headcount control value,
5 a time buffer,
6 a thoroughness of quality control value;
7 a hiring time control value, and
8 a request for information (RFI) time duration value to the project plan data.
- 1 16. The reliability buffering method of claim 9, further comprising:
2 updating the project plan data to provide an updated reliability buffer project plan.
- 3 17. A project management system comprising:
4 a project data processor to provide project plan data; and
5 a reliability buffer processor adapted to receive that project plan data and to generate a
6 project plan with reliability buffers.
- 7 18. The project management system of claim 17 further including a project plan processor
8 adapted to provide conventional project plan data to the project data processor, and wherein the
9 project data processor is adapted to receive the conventional project plan data and to provide the
4 project plan data..